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Rural Lines

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Electrification Section



U. S. DEPARTMENT OF AGRICULTURE

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A Message from the **ADMINISTRATOR**



As our electric co-ops have been growing up—many are now approaching 20 years of age—we look for ways and means to expand our contributions to our home communities. We are learning every day that public relations plays an important part in establishing our organizations in the community and in earning the goodwill of our neighbors.

Thinking a bit about contributions of this kind, I remember about 15 years ago when a group of little boys in my own community were trying to get together a baseball team. The first day, the boys reported for practice in the most fantastic outfits you ever saw. They had uniforms that had been accumulated from here, there and everywhere. Some were too big, some were too small, some had the pants and no blouses and others had blouses and no pants. But all the boys were fired up over the possibilities of having a baseball team.

I remember how the Creamery and the Farmers Elevator and two banks got together to help out the boys. They put up enough money to buy uniforms for those little fellows.

The result of this help from local businesses coupled with enthusiasm on the part of the kids was a good midget baseball team. In a few years, we had competent recruits for the town team. Better than that, the parents turned out en masse to see their hopefults perform on the diamond.

Here was one example of how local businesses made a real contribution to their community. There are many electric co-ops which have undertaken similar activities. We find throughout the country how various co-ops have made use of many different ideas—talent shows, a beauty queen, a trip to Washington for a 4-H boy or girl. We could go on and name many others.

But regardless of how your co-op might go about it, whether it is support of a midget baseball team or sponsorship of some other kind of community activity, the benefits are bound to be substantial—both to your community and to your co-op.

And who knows but that some day you may find you have helped get a budding Babe Ruth on the road to success.

Frank H. Nelson
Administrator.

Joint Action Tested

You might say that they are growing crops at the conference table in Kentucky, but actually they are planting ideas and hoping to harvest rural developments.

Once a month, officials of the Kentucky Rural Electric Cooperative and officials of the Kentucky Utilities Company sit down together to talk over the interests and problems which are common to them as power suppliers.

Out of these regular meetings has come a plan of action which promises to mean much to Kentucky agriculture. It is known as the rural development plan.

Grayson County, Ky., was selected as the first area of operation. Co-op and electric company officials worked with farm leaders and businessmen of the county to help get an organization started. Now that it is under way, the members of the joint committee serve as consultants and the local

people are doing the job for themselves.

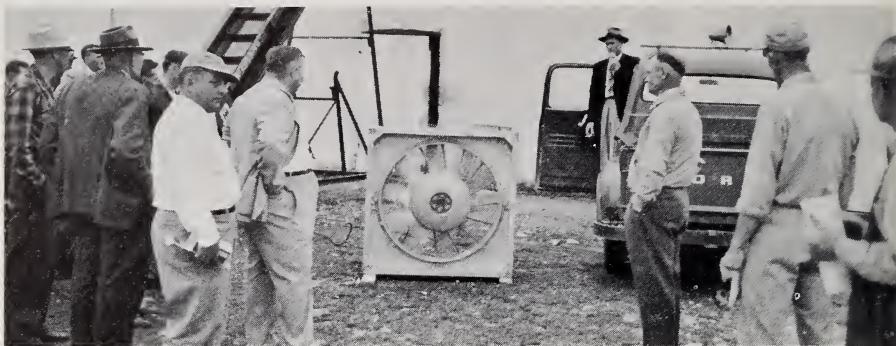
The blueprint for Grayson County's agricultural future is devoted to finding out how farmers can produce new or better crops. For example, soil surveys will be taken in the entire section and advice given as to what new crops might be grown and what crops should be avoided. Terracing, farm ponds, improved seed, hog and beef husbandry all will be included in the plan.

Bankers and businessmen also have their place in the picture. The county committee will call on them to help with ideas for financing sales and promotion.

Both the co-ops and the electric company stand to benefit—the co-ops through increased use of power on the farm and the electric company through the possibility of developing more industry in the area. The Grayson County committee feels that industry can



E. R. Murphy, farm service manager of Kentucky Utilities, addresses the Grayson County Rural Improvement Association, an organization initiated by Kentucky rural electric cooperatives and the Kentucky Utilities Company.



Electric driers and grain elevators were demonstrated at community meeting at McAfee, sponsored by Kentucky Utilities Company and the Fox Creek Electric Co-op.

do much to add to farm income by providing jobs for farmers in the non-growing months.

Grayson County will be used as a pattern to show other counties how the plan may be developed. The Development Committee feels that, as experience is gained, the idea will spread over the state.

A like development arising out of the cooperative approach by the co-ops and Kentucky Utilities Company is a series of jointly sponsored power use demonstrations. Two meetings have been held, with the Shelby Rural Electric Cooperative and the Fox

Creek Electric Cooperative participating. Demonstrations of equipment, wiring plans and motion pictures showing farm uses of electricity are featured.

The rural development plan and the power use meetings are just samples of what has come out of the power supplier conference plan. Some eight committees report at each meeting concerning developments in specialized fields.

The idea behind the whole plan is to get things done. It is not a paper organization or a discussion club but a place where plans can be made and ideas put into action.

REA Funds for 1956 Approved

REA funds approved for the current fiscal year are as follows:
Electrification loan

funds ----- \$160,000,000

Electrification loan
funds—reserve 100,000,000

Telephone loan
funds ----- 75,000,000

Administrative
funds ----- 7,680,000

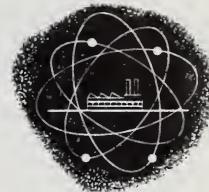
The Department of Agriculture Appropriation Act 1956, which

includes the REA funds, was signed by the President on May 23, 1955.

In addition to the above authorizations, electric loan funds available for use this year will include approximately \$56 million carryover from prior year and an estimated \$4 million in rescissions of prior year loans.

Telephone loan funds available this year will include a carryover of approximately \$30 million.

KEEPING POSTED ON THE ATOM . . .



An increasing volume of information is becoming available regarding atomic energy developments. Speeches, pamphlets and movies prepared in easily understood terms can be obtained from the Atomic Energy Commission and many non-government sources at very little or no cost.

Here's a sample.

Davis Speech. By Kenneth Davis, Deputy Director, Division of Atomic Research, AEC. "The Realistic Evaluation of Nuclear Power Reactors." Down-to-earth appraisal of where we are in atomic power development. REA has limited number of copies.

Business Week Reprint. Eight-page report on who's doing what to develop new power source. Copies of "Electricity from the Atom" are available at 35 cents each from Reprint Dept., Business Week, 330 West 42nd St., New York 36, N. Y.

GE Pamphlet. "Electric Power from the Atom," Speech by Francis K. McCune, general manager, GE's Atomic Products Division. Report on GE's Atomic Power Study appraising promising routes to commercial atomic power. Copies are available from Public Relations Services Division, Dept. 2-119, General Electric Co., Schenectady 5, N. Y.

Westinghouse Pamphlet. "The World Within the Atom," by Charles H. Weaver, manager, Westinghouse Atomic Power Di-

vision. Tells how scientists explored the atom and learned to release its energy. Westinghouse has supplied a limited number of copies to REA for distribution on request to borrowers.

McGraw-Hill Magazine. "Nucleonics," issued monthly. News of key developments in atomic energy field, also technical essays. Address is 330 West 42nd St., New York 36, N. Y.

GE Cartoon Movie. "A Is for Atom", a color film, shows how atom is broken to release energy and how the energy is then harnessed for useful purposes. Your local GE distributor can give you address of nearest GE film library, or you may write General Electric Co., Schenectady 5, N. Y. Only charge is postage.

North American Movie. "Nuclear Reactors for Research" shows research people working with nuclear reactors and explains their use. Available from North American Aviation, Inc., 12214 Lakewood Blvd., Downey, Calif.

Westinghouse Movie. "A Dawn's Early Light" stars Fred MacMurray as a nuclear scientist. It gives a resume of the present status of atomic energy development for peacetime uses. Available from Westinghouse Film Division, P. O. Box 2278, Pittsburgh 30, Pa.

More sources of information of interest to rural electric people will be listed from time to time.



TENNESSEE'S

1
St.

SYSTEM CELEBRATES TWENTY YEARS of REA

Farm folks from 14 eastern Tennessee counties sat in a tent meeting close by Watts Bar Dam early in May and heard their board of trustees tell of another "good year" for the Volunteer Rural Electric Cooperative they set up 20 years ago.

The date was just a few weeks short of the anniversary of their first loan, which was among the first group approved by REA on July 22, 1935.

The meeting beside the Tennessee River carried further significance since it almost coincided with the 20th anniversary of the establishment of REA itself.

Some were there who helped fashion the system from a handful of members in 1935 and build it to its present membership of 21,000. Their get-together was an occasion for renewing old friendships, and reappraising the gains made by their cooperative.

For today, these people—residents of farming communities—are enjoying time-saving conveniences and labor-saving devices they hardly dared to dream of before the days of REA.

You might say Volunteer's members pulled themselves up by their bootstraps to get their farms electrified. Tennessee farmers had waited hopefully for central station service to come to them before REA announced its new loan program in May 1935.

The plan looked good to rural residents around Decatur, Tenn., particularly J. W. Lillard, W. A. Shadow, Frank P. Powell, J. A. Hagler, and R. T. Gamble. They joined with other farm people in organizing a rural electric co-op.

By July 22, 1935, they had received their first loan—\$92,200. This went for financing 78.6 miles of line to take electric service to 545 consumers in Meigs County.



View of the tent and grounds while Volunteer's annual meeting was in progress.

Since then Volunteer has received 21 additional loans totalling \$8,143,600.

So far, Volunteer has repaid \$1,023,025 of its loan indebtedness. Of this, some \$389,670 has been paid in advance under the cushion of credit plan.

Today, Volunteer's 21,000 members are using an average of 425 kwh a month—15 times more than the average 28 kwh a month consumed by the original members in 1936, the first year the co-op was energized. In less than two years, from June 1953 to February 1955, total power consumption jumped 58 percent.

More than 30 percent of the members use electric house heating. More and more farm homes are becoming all-electric, with the latest kitchen and home appliances. Air-conditioning in summer months helps balance out the winter load on house heating; farm shop equipment is a major load builder.

Volunteer's manager, T. J. Fisher, says, "Our members used 90,648,221 kwh for the fiscal year ending June 30, 1954. Already they have used 87 million kwh for the first 9 months of this year. We should exceed the 1954 mark."

Mr. Fisher explains the co-op's

growth and sound financial status in this way:

"We've had a steady, normal growth in the area. Farm incomes have been generally good. And, of course, electricity has helped in the raising and handling of such farm enterprises as livestock, dairying, strawberries (a new crop), tobacco, beans and grain.

"We use TVA power and it's been mainly a matter of educating our members on the values of labor-saving and comfort-type electrical items.

"The capable leadership our trustees have given over the years is definitely a key factor in our success. We've been especially fortunate in having efficient, public-spirited leaders."

Volunteer's trustees have their own way of pointing out the benefits accruing from their 20-year old enterprise. Here's what two of them say:

J. Fred Bacon, board president: "Electricity has been the making of our farming area."

J. Howard Hornsby, secretary-treasurer: "Before REA there wasn't a power line in Meigs County. Today, 98 percent of the people in our entire 14 county area have electricity."



Part of the annual meeting crowd representing the 21,000 members in 14 counties now served by the Volunteer Rural Electric Cooperative, organized 20 years ago.

In Mississippi

Systematic Care Cuts Pole Losses

THE way leaders of Delta Electric Power Association, Greenwood, Miss., look at pole care today, it's pretty much a matter of a stitch in time saving nine.

Delta, with some 62,000 poles to maintain along its 6,000 miles of line, is one of a growing number of REA borrowers which are swinging into planned, systematic pole inspection and maintenance.

Up to a year ago Delta had no systematic method of checking poles. Rotten ones were replaced as linemen spotted them on their rounds. The catch to this was that only poles requiring other work were spotted. Result: outages kept bobbing up all too frequently.

Inspection Crew Trained

A year ago Delta figured it was high time to cut down on outages and pole risks. At Manager L. C. Spencer's request, Walter J. O'Neil, REA timber specialist, spent a week at Greenwood, training co-op outside plant crewmen and part-time pole checkers. Instruction was carried on in the field where inspection and maintenance could be taught first hand.

"We learned a lot about keeping poles fit," says J. R. Burnett, Delta's chief engineer. "The idea of working out a plan for keeping tab on all our poles made sense."

Delta's next step was to tackle the job of caring for its poles.



Delta Electric pole checkers, Albert Lee and Charles Blalock, prepare to make a below ground-level inspection of pole.

Two trained pole inspection teams checked a total of 2,380 poles between mid-June and September 1.

Inspections were made generally on 3-phase lines and took an average of 15 minutes a pole. Each pole was "sounded", visually checked, and increment borings were taken above and below ground. Crewmen also tried guy wires and noted the condition of rights-of-way and insulators. By summer's end, 113 poles had been replaced and 28 stubbed.

Where possible, stubbing and changeouts were made after cotton and corn harvesting. But in all cases bad pole risks were changed out at once.

Long Pull Ahead

Pole inspectors checked 280 miles of line last summer. At that rate it's going to be a long pull to reach poles on the remaining 5,700 miles of line. But Delta aims to keep at it and eventually

hopes to have a record of the condition of all poles in its system. With a year of pole inspection experience behind them, Delta's crews aim to check a much larger number of poles this summer and fall.

To keep tab on poles, Delta has adopted a handy Field Pole Inspection Report form.

This form has blanks for listing the inspector's name, pole location, map number, and starting point and grid number. Other entries include: pole number, pole class, birth, supplier, and condition. The inspector can also indicate need to reinspect, replace, climb and inspect. Other spaces

are for indicating work on insulators, crossarms, tightening guys, trimming trees, and clearing rights-of-way.

Delta is a strong supporter of joint-use pole agreements. More than 6,800 of the co-op's poles are also used by Southern Bell Telephone Company. Delta uses 350 of the company's poles.

William T. Richter, assistant to Delta's general manager, observes that joint pole use actually cuts down the length of outages. He says, "People with phones call in and report trouble on power or telephone lines; this makes it possible to give speedier repair service."

George Lewis Dies

REA lost one of its pioneers with the death of George A. Lewis on May 2, at the age of 65. Mr. Lewis joined the REA staff in November 1935 and was widely recognized for his outstanding success in working out difficult loan problems of the borrowers in the early days of the rural electrification program. He was senior field representative from June 1940 to January 1941. He became regional head in REA's old Applications and Loans Division in January 1941 and assistant chief of that division in June 1944. A Load Study Manual which he prepared in 1946 had wide use in rural electrification.

In 1952, when the REA staff was reorganized, Mr. Lewis was named assistant director of the North Central Electric Distribu-



George A. Lewis

tion Area Office. He was head of Operations Section 5, North Central Area, at the time of his death.



WHEN WINTER COMES...

House Heating Balances Load

IT takes planning to build a winter load to equalize the power peaks a lot of irrigation pumps can put on a system during the summer.

That is what the management of Flathead Electric Cooperative of Kalispell, Mont., found out. A look at the co-op's 1,200,000-kwh monthly load and its achievement in spurring farmers on to try irrigation and electric house heating and you get the idea of what it takes to build up kilowatt-hours.

Year after year this borrower has increased power usage by a system of friendly guidance, group meetings and careful power use planning. Sometimes it has taken encouragement and a helping hand to get members to try something new in rural electrification. In other cases, offers of technical assistance did the trick.

Flathead Electric serves a 240-square-mile area in parts of Flathead, Lake and Lincoln Counties. In the vacation season a good share of the half million or more tourists visiting Glacier National Park pass through the co-op area.

Crops Are Varied

Fertile valleys produce a variety of crops including alfalfa—one of the main crops—potatoes, peas, grain and certified seed. Dairying

and livestock ranching are also good money-makers. And up above the bottomlands are vast timber stands.

It is in electrified irrigation, sawmill operations and house heating that Flathead co-op is making some of its best load gains today.

In cooperation with irrigation companies Flathead helped install the first sprinkler sets in its area 3 years ago. Farmers invited to see these "pilot" systems in operation soon were talking about putting in sprinklers of their own.

Last summer 59 irrigation systems, with a total of 1,262 hp used 300,000 kwh per month. Some 129 more systems are expected to go in by 1964.

Irrigation Problems Discussed

At the pilot system demonstrations, the co-op technical staff conducted irrigation meetings. At these well-attended meetings, problems of financing, installation, and the general utility of sprinkler systems were explained to farmers. Specialists from leading sprinkler manufacturers spoke at the meetings. Facts on sprinklers were also emphasized in newsletters.

With sprinkler irrigation proving a good load builder, and tourist

business picking up in resorts and inns having electricity, power consumption was good during the summer months. But, consumption did not keep pace through the winter period.

To give winter consumption a boost, the management began encouraging farmers to look into the benefits of electric heating—both wall and baseboard types. Many did, with the result that the winter load moved up close to the summer level.

There are now 25 all-electric homes in the co-op area and a like number of homes with supplemental electric heat. Records show that heating a farm house requires from 9,000 to 12,000 kwh a year. All-electric homes use from 15,000 to 25,000 kwh. The connected load of the 50 electrically heated homes totals 544 kw.

Electric Heating Climbs

It's said that 20 percent of the co-op's 2,095 members will use electric house heating in the next ten years.

Commercial accounts, heating electrically, especially motels and resorts at the west entrance to Glacier National Park, have added a sizable new block of kilowatt-hours. Eighteen hotels and resorts now use electric heat. They average around 8,000 kwh a

month. The way tourist trade has been growing, the present commercial consumption could be only a starter.

Here are some of the steps Manager R. H. Gatiss, Engineer Bernard Horstman and Power Use Adviser H. J. Ferguson took to stir up interest in electric heating.

Planning Built Load

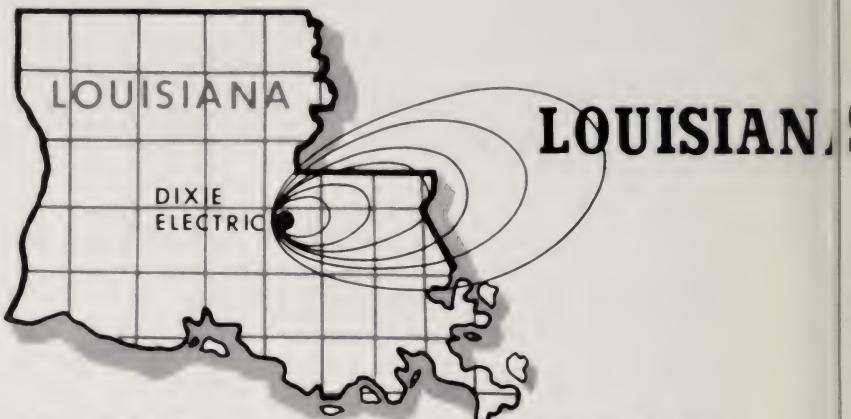
First, they announced their house heating plans in the co-op newsletter. Then they began conducting a series of "house heating" meetings for electricians, heating contractors, architects and farmers. Top speakers from the ranks of heating manufacturers and demonstrations made these meetings lively and popular.

The power use adviser helped farmers design their heating systems, answered their heating questions and helped work out their problems. Any farmer interested in house heating may request such service. The co-op displays various makes of electric heaters in its office.

The co-op's attractive rural electrification display and exhibits at the Flathead County Fair stimulated interest in house heating, sprinkler irrigation, chick brooders, kitchen appliances, hay and grain drying equipment, and other items.



Flathead Electric's answer to winter's cold—electric house heating panels. Mrs. Lois Byers of the co-op staff shows office display set up for members' information.



TAKE it from John E. McAdam, manager of Dixie Electric Membership, Corp., Baton Rouge, La., good public relations isn't something REA borrowers can attain over-night with back-slapping and soft music.

"It's really hard to put your finger on the payoff from public relations work," Mr. McAdam says. "We can't measure gains simply by sales volume like the breakfast food advertisers do. But we do know that Dixie stands for integrity in our service area and that folks are loyal to us and are solidly behind our system."

Dixie's manager and board of

directors know how to get along with people. They have recognized their responsibility to the community, and have made the cooperative an integral part of it.

The co-op has been building goodwill on several fronts, but has achieved notable success through the use of its rescue crews and equipment in community emergencies and in the use of its photographic team. The photographic work actually was set up as a goodwill measure. On the other hand, the rescue program originally was set up as an essential part of the system's safety program, but was broadened to serve the area in response to local need.

Dixie's emergency crew has received calls and given help in all kinds of accidents, but generally their calls are for rescue work in drownings, swamp accidents, fires, asphyxiation, electrical accidents, and sometimes in artificial respiration for polio victims.

Dixie regards the use of its facilities in these emergencies as part of its contribution to the community. But the co-op has reaped a by-product of goodwill which it could not have purchased with any amount of money.



Sample of news picture which Dixie Electric sent to local papers. This shows poles and lines down after heavy rains.

SYSTEM BUILDS GOODWILL

To begin with, Dixie's all-purpose first aid trailer was built and equipped to handle accidents and emergencies occurring on its own lines. But soon the rig was in demand to help out in accidents in towns and rural communities nearby. Today, the trailer and its trained rescue crew are subject to call around the clock, from city, parish and state agencies.

All outside plant employees, shop workers and some office employees, have current Red Cross first aid certificates and voluntarily go on emergency calls after working hours.

Here are some of the things Dixie keeps on hand in its trailer: 2 resuscitators, grappling hooks, stretchers, gas masks, axes and shovels, power saw, fire extinguishers, flood lights, rope, an underwater "frog man" kit, and coffee makers. The trailer has its own generating plant and a hitch for connecting to any vehicle.

Dixie Electric has gotten its money's worth from the trailer.

It cost around \$2,000. Much of the work in building and equipping was done in Dixie's own shop.

Unlike the rescue work, the photographic service of the co-op was set up as a goodwill builder.

Mr. McAdam, who says, "We have nothing to sell but service," lets pictures tell the co-op story.

Mr. McAdam, an experienced photographer, began stepping up the use of press photos and movies as goodwill builders in 1949.

The co-op now has a photographic laboratory in the new office building in Baton Rouge, and has three staff members trained in photography.

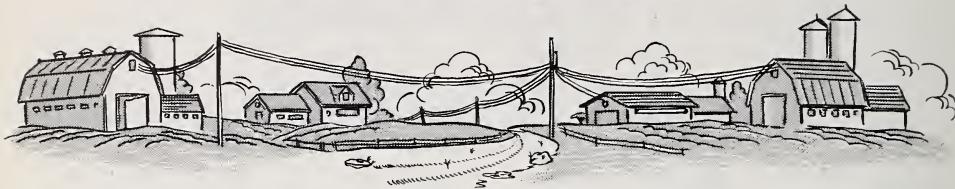
The photo service has paid off in goodwill many times over according to Mr. McAdam. The co-op supplies pictures to the Louisiana Rural News, to Baton Rouge and New Orleans TV stations, to city, parish and state groups.

Says Mr. McAdam, "Good news photos are about the best way we know to get the story of our system over to our people."



Dixie's rescue squad works out with equipment from its specially built trailer. Left to right: Thomas Ingram, Leo Ficklin, Woodrow Cowart (kneeling), Will King (victim), J. W. Lilly, Charles Solar, L. C. Crutchfield, Jack Efferson (kneeling), and Clark Humphrey (victim).

POWER USE EXCHANGE



The Kansas Inter-Industry Farm Electric Utilization Council has sent a form to all electric cooperatives and companies in the state to send in stories on sales plans which got results. The Council will reproduce them and send them out to all electric systems. With the exchange of "ideas that clicked," they hope to help all Kansas farmers to greater electrification.

Electric heating for farm homes is catching on in Iowa, according to a recent story in the Des Moines Register. The article quotes H. F. Mears, manager of the Greene County Rural Electric Co-op, as saying, "When we can get our power consumption up to where we can reduce heating costs to one cent a kilowatt hour, we'll be swamped."

One farmer, Floyd Roby, Madrid, Iowa, said he had been worried about heating with electricity in sub-zero weather, but, "We went through that in January and we're satisfied."

Mrs. Richard Sydnes marvels at how little dusting is necessary and that there are no cobwebs. "It smells like fresh spring air," Mr. Sydnes says.

The Bethel Community Church in Schuyler County, Mo., uses 96

infrared lamps of 250 watts each to heat the chapel of its 50-year old country church. The church pays no "light" bill during winter months since the heating system furnishes plenty of light. In fact, about 20 percent of the lamps are red to cut down on light.

There are 8 lamps on each circuit, staggered so that heat is distributed evenly over the room, regardless of the number of lamps in operation. The infrared lamps need be on only about an hour to bring the room to a comfortable temperature.

The church is served by the Tri-County Electric Cooperative, Maurice S. Solomon, manager. Guy Kirby, one of the co-op's directors and a member of the church, thought of using electric heat when the congregation wanted to discard its two large stoves. Glen Bolton, plant superintendent for the co-op, then hit upon the idea of heat by infrared lamps.

Cass County Electric Cooperative, Inc., Kindred, N. Dak., encourages purchases of electric clothes dryers by sending a demonstration model to farm homes for a trial period. Housewives liked the idea of choosing their wash day to suit their own schedules.

Another Colorado Loan For Power

REA on May 25 approved a loan of \$10,155,000 to the newly formed Colorado-Ute Electric Association, Inc., of Montrose, Colo., for construction of generating and transmission facilities in southwest Colorado.

It was the second loan within a month by Administrator Nelsen for the purpose of improving the power supply situation in rural Colorado. Earlier he had approved a \$3.5 million loan to Arkansas Valley G & T, Inc. of Pueblo, Colo. (See RURAL LINES, June 1955.) Together the loans will boost generating capacity in the state by 54,450 kw.

The Colorado-Ute loan will assure members of 4 electric cooperatives an adequate supply of electric energy. An agreement be-

tween Colorado-Ute and Western Colorado Power Company calls for interconnected operation of the cooperative's new system and the power company's system.

In order to provide a sufficient state ceiling to permit this loan, REA drew down its reserve loan authorization of \$35,000,000. It also earmarked \$2,914,556 of the 1956 loan authorization but this amount is under stop order until July 1.

Colorado-Ute is an association of 4 REA-financed distribution cooperatives — Delta - Montrose Rural Power Association, Inc. of Delta ; San Miguel Power Association, Inc. of Nucla ; LaPlatta Electric Power Association, Inc. of Durango and Empire Electric Association, Inc. of Cortez.

S. C. Loan Deferred

The Central Electric Cooperative of Columbia, S. C., has been granted a 3-year deferment of principal payments due REA on loans totaling \$13,618,000.

The deferment permits the Cooperative to purchase wholesale power from the South Carolina Public Service Authority at 6.4 mills, an increase from the present 6-mill rate. Present retail rates to South Carolina farmers will be maintained.

Central Cooperative is a federation of 16 electric distribution cooperatives providing electric service to more than 80,000 South Carolina rural families. The loan was made by REA in 1950. Chief source of revenue for loan repayment consists of payments by the

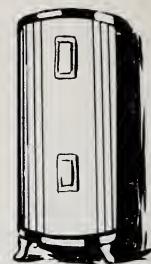
State Authority as rental of the cooperative's transmission facilities. Before the loan deferment was requested, the Authority had given notice of a rate increase to 7.3 mills, retroactive to January 1, 1955.

In approving the extension, Administrator Nelsen made it clear that REA's concern is to help its borrowers—Central and the distribution systems—maintain reasonable power rates on which their loan feasibility depends.

Two other primary conditions of the extension are that the Public Service Authority finance future system expansion, and that the overall agreement for deferment is subject to reconsideration.

You've Been Asking About . . .

Quick Recovery Water Heaters



WHAT about the new quick recovery type water heaters? How will they affect system loads? Should rates be adjusted?

These are some of the questions REA borrowers are asking as more and more of these heaters are coming on their lines. With a 40-gallon storage tank and a 4,500-watt heating element, this heater was designed to meet consumer demand for a heater with lower initial and installation cost than conventional types and to provide ample supplies of hot water at all times.

Here are questions most frequently asked, with answers:

1. How will these heaters affect system load?

The amount of water to be heated will not be changed, kwh used will not be changed, and it is unlikely that system peak load will be changed appreciably. In spite of the larger heating element, system-wide installations of these heaters should not materially affect system load factor because of the diversity of operation among the various heaters. Load factor might be lowered slightly, but any change would be so small as to be obscured by other load variations.

2. Should we use controls?

No. Each heater has approximately 4 times the wattage rating of the conventional 50-gallon dual

element heater. An attempt to make a system-wide heater pick-up after a control period would cause serious demand peaks. If a staggered pick-up plan were used, the control period would be lengthened to such an extent as to cause serious shortage of hot water. The 40-gallon tank capacity offers little storage for extended off periods.

3. What about the added investment the co-op would have to make at consumer premises?

Because of the higher element rating you may have to install the next larger size transformer in order to provide sufficient capacity to meet the consumer's load requirements. As part of the water heater load cycle is expected to coincide with the washing and drying cycles on the heaviest wash day, the consumer's transformer capacity has to be available for this service. However, normal load growth patterns indicate that such consumers would soon require larger transformers any way.

4. Should we adjust rates?

Preferably, no. You should have no change in your wholesale power costs. The system load factor should remain the same. Larger transformers must be installed for some consumers but for the reasons already given this does not seem to justify a higher rate. Therefore, if possible, the heaters

should be served at low rates to encourage general use.

If you have a rate for storage type heaters requiring that the wattage of their heating elements shall not exceed 20 or 30 watts per gallon of tank capacity, you should give consideration to the advantages of eliminating the wattages requirement so that the rate will be available to quick recovery heaters. If the water heating rate per kwh is 4 mills or more higher than the cost of power per kwh at the wholesale meter, it is probably

high enough. But, if you have an off-peak rate for controlled off-peak water heating service, it is probably too low to cover the cost of serving quick recovery heaters and should not be made available to them.

5. Will this development help promote electric water heaters?

Yes. It is attractive to rural consumers because of its lower initial cost and quick recovery rate. If no special rate restrictions are encountered, it should make a strong appeal to members.

PIONEER

Born in Oklahoma Territory 9 years before statehood, Roscoe F. Keiffer is not only a "Sooner" but also a pioneer in the rural electrification program.

Mr. Keiffer and others wanting electric service for their farms met at the county courthouse in Cherokee, Okla., in 1937. At that meeting the foundation was laid for the Alfalfa Electric Cooperative. Mr. Keiffer was an organizing "salesman" for the group and was elected vice president when formal organization was completed. He held this post 5 years, and has been president since 1942.

His enthusiasm for the program, his effectiveness in helping build the Alfalfa cooperative and his increasing activities in the broad program of rural electrification put him out in front in Oklahoma. In 1946, he was elected vice president of the Oklahoma Statewide Electric Cooperative. He now is serving his second term as president of the Statewide.



Roscoe F. Keiffer

Long an advocate of low cost electricity, he has served on power advisory committees throughout the Southwest. He has been a director of Western Farmers Electric Cooperative, a G & T cooperative, since 1947.

Mr. Keiffer was graduated from Oklahoma A & M College, Stillwater, and taught animal husbandry for 4 years at Colorado A & M College. He returned to the farm near Helena in 1924, and has been farming ever since.

THE LINEMAN



It Could Happen on Your Lines

The Morgan County Rural Electric Association, Fort Morgan, Colo., reprinted the story of a fatal accident from its local paper to warn its members of the danger of fallen wires.

Ft. Morgan Man, 29, Is Electrocuted On Farm

A 29-year-old Fort Morgan man, the father of three young children, was electrocuted Wednesday afternoon when he tried desperately to pull him loose from the hot wires.

Dale Sparks, who recently moved to the M & M trailer court in Fort Morgan, is a short time later as members of the Local court sheriff's office and the State Highway Patrol attempted to revive him with artificial respiration.

Sparks, who worked for the Denver, Boulder and Western Railroad, was electrocuted when he fell from a truck near the highway bridge over the Colorado River, about 10 miles from town.

He screamed for his father to help him and his father, Mr. W. H. Sparks, 60, who was in the truck, tried to pull him loose but was electrocuted himself.

Here are excerpts from the letter Manager Marion M. Wilson wrote members, urging their cooperation in preventing similar accidents on their own system:

"When 50-60-70 mile-an-hour winds whip across this country any wire line is very liable to get into trouble . . .

"You can render no greater service to yourself, your neighbor and your REA cooperative than to have a look at the lines near your farm after one of these storms has blown itself out.

"If you see anything wrong . . . you should report it . . . as soon as possible. Treat all wires as 'live' all of the time.

" . . . Do not touch or go near or permit anyone to go near a broken line . . . Please cooperate!"

Tell Members About Your Job

The newsletter of the Little Ocmulgee Electric Membership Corp., Alamo, Ga., asks members:

"Do you know that your cooperative operates enough miles of line to reach from here to Miami and back, with enough left over to reach to Atlanta and return; that every line is regulated by a voltage regulator to keep the voltage from going too high or too low; that the directors and manager plan 10 years ahead to take care of increased use of electricity, placing the engineers' recommendations in effect as the load develops; that all the lines are checked at regular intervals to ascertain the load and voltage

drop; that substations must be requested from one to two years ahead of their need; that several hundred oil circuit reclosers, fuse disconnects and other switches are located over the 1300 miles of line and that it requires several years for a lineman to learn the roads, circuits, how they are fed, in order for him to safely and efficiently give good service to the members. A highly trained and technical staff of skilled employees is necessary for the light to burn every time you flip the switch. He may be a home boy, but he must acquire this skill and ability to hold his job."

Worried About Collections?

Tennessee System Cut Slow Bills 60%

Adopting a policy with regard to delinquent accounts and then sticking with it has paid off for the Millington Telephone Company, Millington, Tenn. According to W. S. Howard, president, in 2 years' time the company reduced the amount of delinquent bills carried over each month from around \$2,000 to about \$400.

The problem of delinquent accounts is one that every rural telephone system has to face at one time or another. This is how the Millington company cut its delinquencies by 60 percent.

It began with a recognition that subscribers should know about the company policy with regard to delinquents. And Mr. Howard decided to tell them plainly but diplomatically.

Sends Friendly Letter

For instance, as soon as a farmer has his telephone installed, the company sends a friendly letter, welcoming the family as a part of the subscriber group. The letter outlines the courtesy rules applying to a party line telephone, asks the new subscriber's cooperation, explains the use of the directory, and then the position of the company on delinquent bills.

The management found that many of the subscribers did not

TELEPHONE

The image shows three rectangular forms, each with a small illustration of a telephone receiver. The top form is titled 'Just A Reminder' and contains a statement: 'Like a faithful watchful telephone guards your home' and 'According to our records your telephone bill is past due as shown at the right.' It has fields for 'DATE' and 'AMOUNT PAST DUE' with a dollar sign. The middle form is titled 'NOTICE OF PAST DUE ACCOUNT' and features a similar statement: 'The Telephone is Your Faithful Servant' and 'According to our records the amount of \$_____ is Past Due on your account. We are calling the matter to your attention with the thought that it may have been overlooked.' It also has 'DATE' and 'AMOUNT PAST DUE' fields. The bottom form is titled 'FINAL PAST DUE NOTICE' and contains the same notice: 'Our records show that your telephone bill is still unpaid. Much as we may regret it, if it is not paid by we will be forced to suspend your service, and an extra charge will be necessary if it is later reinstated.' It includes 'DATE', 'TOTAL AMOUNT PAST DUE ON YOUR TELEPHONE ACCOUNT \$', and a note: 'Please pay your bill! Millington Telephone Co., Inc. If This Bill Has Been Paid Please Disregard This Notice.'

Reminders sent at intervals by Millington Telephone Company to spur payment of delinquent bills.

realize that bills were delinquent after the 10th of the month. Bills are due and payable on the 1st, and delinquent on the 10th.

Millington's officers believe that most subscribers who become delinquent do so through carelessness rather than willfulness. Therefore, the company has introduced a series of reminders.

Gentle Hints

The first is headed, "Just a Reminder . . ." It carries the amount past due, and is sent if the bill has not been paid by the 10th.

If the bill is still unpaid 10 days later, a "Notice of Past Due Account" is sent. It carries this statement: "We are calling the matter to your attention with the thought that it may have been overlooked."

If the end of the month arrives and the bill still is not paid, the



W. S. Howard, company president, tests subscriber line with trouble shooter.

company takes a tougher attitude. This time it sends a "Final Past Due Notice." This heading is printed in a bold, black type. This statement carries a reminder that, "much as we may regret it," if the bill is not paid by a given date, the company would be forced to suspend service and an extra charge would be necessary to re-connect. This final notice carries the plea, "Please pay your bill!"

With the original monthly statement and each additional notice, the company encloses an addressed return envelope to make payment as easy as possible. Mr. Howard feels that the return envelope is worth many times what it costs.

Further encouragement to members to pay promptly is given in "Dial Tones," the company's brief newsletter which is enclosed with monthly bills. For instance, a recent issue contained this paragraph:

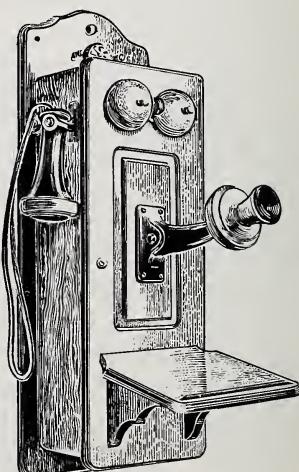
"The Circle Is Not Vicious.

"Telephone bills are due and payable by the 10th of each month. Please pay us promptly so that we can pay others promptly so that they can pay you promptly. It isn't playing fair with the subscribers who do pay promptly for us to allow others additional time while our obligations go unpaid."

According to the folks at Millington, the way to handle delinquencies is to establish a firm policy and then carry it through.

Telephone Program on TV

A short feature on the REA Rural Telephone Program, "New Ears for Rural America," is being sent to television stations in all parts of the United States. Some of the newest developments in rural telephony are described, as well as REA's efforts to bring new and improved telephone service to farmers. This packet of information is being sent to help TV farm directors set up a show on the rural telephone program. Watch for this feature on your local TV station.



Louisiana System Tests Microwave

This is a report of another effort by REA to obtain radio equipment to provide economic telephone service to farm people living in isolated areas, cut off from population centers by swamps or other natural barriers.

About a year and a half ago REA telephone engineers installed a 900-MC radio system on the Louisiana coast of the Gulf of Mexico. It was set up under a cooperative test arrangement with the Lafourche Telephone Company, Larose, La., Budelman Radio Corporation, Stamford, Conn., the Gulf Oil Corporation and REA.

The point-to-point system operates on a 13-mile path between Grand Isle and Belle Pass, south of Golden Meadow. The area is tidal swamp land, covered by salt water even at low tide and supporting only a growth of marsh grass.

John A. Brady, Sr., president of the Lafourche Telephone Company, had determined that it would be too costly to run conventional telephone pole lines across this swamp to Gulf Oil's isolated coastal pumping station.

The experimental equipment provides 3 telephone circuits between Gulf Oil's pumping station and tank field at Belle Pass and the dial offices on Grand Isle. REA engineers were on hand for the installation and have made changes and adjustments in the equipment over a period of several months.

In general, this equipment performs the same functions as the microwave equipment being used by the Amberg Telephone Company, Wausauke, Wis. (See *RURAL LINES*, January, 1955.)

This microwave equipment was designed as a low cost unit and installed in Louisiana for testing by REA. After making design changes to meet some of the problems that showed up in the early months of operation, satisfactory service is now reported.

The Lafourche company is keeping a close check on the Belle Pass equipment and reporting its findings to REA. The company believes that the system has many desirable features.

It can easily handle a few channels, from 1 to 5, and can be built to carry a few more. The equip-



Eric Pearson of Lafourche Telephone Co. monitors microwave transmitter installed at eye-level on pole at Belle Pass.



Thomas Robichaux, Gulf Oil pumping plant manager, uses microwave for telephone call.

ment installed between Grand Isle and Belle Pass has 3 telephone channels and an order wire circuit. It operates in the 890 to 940 MC band. Conventional vacuum tubes, such as those in lower frequency FM radio transmitters and

receivers, are used in this microwave equipment.

At Belle Pass, boxes housing the microwave transmitting and receiving units are mounted on the pole tower at eye level. This facilitates maintenance.

This type of equipment can be purchased and installed for around \$8,500. Its installation is quite similar to that of a conventional mobile radio system.

REA engineers are continuing to keep a close check on the Louisiana system to find out its operating and maintenance characteristics over a long period of time. Comparison can then be made to operating and maintenance costs of carrier equipment and conventional wire lines.

Ship-to-Shore Telephones

The first loan made by REA for mobile radio-telephone service was approved May 3, 1955, to the Lafourche Telephone Company.

Many rural residents along the Gulf Coast of Louisiana depend upon shrimping as their primary means of livelihood. Communications are difficult in this area of swampland and irregular coast line. The REA loan of \$36,000 was made to provide ship-to-shore telephone service for the shrimp fleet and other mobile operations such as oil-drilling outfits along the southern edge of Jefferson and Lafourche parishes.

The company plans to erect a 270-foot guyed tower, with transmitting and receiving antenna, at Grand Isle to meet the specific needs of shrimping boats, tow boats and chartered craft, as well

as tidelands oil-drilling stations. In addition, a transmitting and receiving antenna will be mounted on the existing microwave tower at Golden Meadow to handle mobile, land-based, radio-telephone traffic. Radio-telephone control equipment at the existing Larose toll board will handle both land and maritime messages.

The Lafourche company serves about 1,700 subscribers from 6 dial exchanges, located at Cutoff, Galiano, Larose, and Leeville as well as Golden Meadow and Grand Isle. The Grand Isle exchange gets its service through microwave facilities.

No funds will be provided by REA or by the telephone company for maritime subscriber installations. Such units may be individually installed as desired.

EQUITY RECORD

Texas System Sign-up Tops Mark

ONE of the best equity payment sign-ups yet chalked up by an REA telephone borrower is reported by Guadalupe Telephone Co-op., Smithsons Valley, Texas.

This borrower, which celebrated cutover to automatic dial service in April, is proud of its record of obtaining \$50 equity payments from 98.4 percent of the estimated subscribers in the area covered by its first loan. Some 520 subscribers signed up for service—nearly 100 more than had been expected.

Manager Allan L. Sanders credits the company's good equity payment record to a combination of factors, but emphasizes that everybody worked hard at it. Here are the factors he lists as helpful in the good sign-up:

"1. Rural residents were given facts and plenty of information about what new telephone service would do for them. We answered their questions and aimed to make them feel that they were a part of our system.

"2. We tried to get the idea over that a good equity sign-up was essential to getting modern service for our community.

"3. Incomes of our rural people have been generally good, which means that most people had the money to sign up for service.

"4. People needed good telephone service."

Mr. Sanders explains further, "We felt good about getting most of our rural people signed up for telephones. It certainly made the rest of our job easier and cleared

the way for our REA loan and our new dial system."

The co-op's first loan was for \$611,000 to provide service to subscribers in Bexar, Kendall, Blanco and Comal Counties, with exchanges at Smithsons Valley, Bulverde, Sattler, Kenberg and Sabina. When the system cut over to dial service, it was the first time that many of the subscribers had experienced top telephone communication.

Mr. Sanders says, "Our co-op serves a completely rural area. Our largest village has only a few houses, a store and 3 gas stations. Our members lean pretty heavily to farming. They stick close to their homes and are getting a lot of fun out of telephoning around to their friends and neighbors. Good telephone service has helped farmers handle their business more efficiently, too."



Manager Sanders makes a call on the test board in new automatic dial exchange.

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PENALTY FOR PRIVATE USE TO AVOID
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LOANS APPROVED APRIL 20 THROUGH
MAY 24, 1955

ELECTRIFICATION

\$ 340,000 West Central Electric Co-op,
Murdo, S. Dak.
30,000 Bayfield Electric Co-op,
Iron River, Wis.
375,000 Presque Isle Electric Co-op,
Onaway, Mich.
420,000 Tallapoosa River Electric Co-op,
Lafayette, Ala.
2,310,000 Brazos Electric Power Co-op,
Waco, Texas
100,000 North Arkansas Electric Co-op,
Salem, Ark.
20,000 Rich Mountain Electric Co-op,
Mena, Ark.
165,000 Decatur County REMC,
Greensburg, Ind.
50,000 Decatur County REMC,
Greensburg, Ind.
218,000 Allen-Wells County REMC,
Ossian, Ind.
500,000 Valley Electric Membership Corp.,
Natchitoches, La.
1,230,000 KAMO Electric Cooperative,
Vinita, Okla.
275,000 Shenandoah Valley Electric Co-op,
Dayton, Va.
3,500,000 Arkansas Valley G & T
Pueblo, Colo.
260,000 Harrison County Rural Electric Co-op,
Cynthiana, Ky.
25,000 Cape Hatteras EMC,
Buxton, N. C.
645,000 Hancock-Wood Electric Co-op,
North Baltimore, Ohio
265,000 Cooperative Electric Power and
Light Co., Iola, Kans.
275,000 Central Electric Co-op,
Redmond, Ore.
100,000 Santee Electric Cooperative,
Kingstree, S. C.
575,000 Upper Cumberland EMC,
Carthage, Tenn.
900,000 First Electric Co-op Corp.,
Jacksonville, Ark.
100,000 C & L Rural Electric Co-op Corp.,
Star City, Ark.
50,000 Pataula Electric Membership Corp.,
Cuthbert, Ga.

155,000 Wharton County Electric Co-op,
El Campo, Texas
579,000 East River Electric Power Co-op,
Madison, S. Dak.
755,000 McKenzie Electric Co-op,
Watford City, N. Dak.
100,000 Southside Electric Co-op,
Crewe, Va.
50,000 Golden Valley Electric Association,
Fairbanks, Alaska
140,000 Humboldt County Rural Electric Co-op,
Humboldt, Iowa
420,000 Harmon Electric Association,
Hollis, Okla.
230,000 Pee Dee Electric Co-op,
Darlington, S. C.

TELEPHONE

\$873,000 Midstate Telephone Co.,
Kimball, S. Dak.
183,000 Silex and Eolia Telephone Co.,
Bowling Green, Mo.
450,000 Friendship Telephone Co.,
Friendship, Tenn.
364,000 Coon Valley Farmers Telephone Co.,
Coon Valley, Wis.
81,000 Mid-Rivers Telephone Co-op.,
Circle, Mont.
464,000 Progressive Rural Telephone Co-op.,
Dudley, Ga.
271,000 Brandenburg Telephone Co.,
Brandenburg, Ky.
36,000 Lafourche Telephone Co.,
Golden Meadow, La.
166,000 Northern Arkansas Telephone Co.,
Flippin, Ark.
237,000 Santa Fe Telephone Co.,
Melrose, Fla.
557,000 Elmore Telephone Co.,
Brownsville, Ky.
202,000 Piedmont Telephone Co.,
Manassas, Va.
221,000 Bay Springs Telephone Co.,
Bay Springs, Miss.
294,000 Unity Telephone Co.,
Unity, Maine
418,000 Buffalo Telephone Co.,
Buffalo, Mo.